

**ABSTRACT**

The provides a CDK4 binding peptide, and a nucleic acid sequence coding therefore, that is capable of specifically binding cyclin dependent kinase (CDK4) to inhibit CDK4 activity and cell growth. The invention also includes variants of the CDK4 binding peptide which comprise polypeptides which have at least about 80% amino acid sequence identity with the amino acid sequence of the CDK4 binding peptide. In another embodiment, the invention provides chimeric molecules comprising a CDK4 binding peptide fused to a heterologous peptide or amino acid sequence, preferably a nuclear localization signal. Therapeutic and diagnostic methods are also provided.